

L1 FILE 'REGISTRY' ENTERED AT 16:11:56 ON 19 AUG 2009  
1 S CLOPIDOGREL BISULFATE/CN

L2 FILE 'CAPLUS' ENTERED AT 16:12:12 ON 19 AUG 2009  
23 S L1(L)FORM  
L3 14 S L1 (L) (FORM (3W) I)

=> d bib hit 1-14

L3 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN  
AN 2009:798828 CAPLUS  
DN 151:108488  
TI Process for the preparation of clopidogrel bisulfate crystal form I  
IN Salunke, Sanjukumar; Paul, Aniruddha; Nair, Raji; Kintali, Ramana Venkata  
PA Sandoz A.-G., Switz.  
SO PCT Int. Appl., 24pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2009080469	A1	20090702	WO 2008-EP66866	20081205
	W:	AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW			
	RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			

PRAI IN 2007-MU2535 A 20071224  
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT 120202-66-6  
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(process for the preparation of clopidogrel bisulfate crystal form I)

L3 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN  
AN 2008:944010 CAPLUS  
DN 149:231801  
TI Process for preparation of crystalline clopidogrel hydrogen sulfate Form I  
IN Kumar, Ashok; Bhayani, Priti Jayesh; Doshi, Vaibhav Chinubhai; Saxena, Ashvini; Pathak, Gunjan Pramod; Abhyankar, Rashmi; Manavalan, Sarvanan; Purohit, Mukesh; Parihar, Santosh  
PA Ipca Laboratories Limited, India  
SO PCT Int. Appl., 32pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI WO 2008093357 A2 20080807 WO 2008-IN52 20080129  
 WO 2008093357 A3 20081204

W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA

IN 2007/MU00161 A 20070309 IN 2007-MU161 20070129  
 IN 2007/MU00292 A 20081024 IN 2007-MU292 20070213  
 IN 2007/MU01594 A 20090522 IN 2007-MU1594 20070820

PRAI IN 2007-MU161 A 20070129  
 IN 2007-MU292 A 20070213  
 IN 2007-MU1594 A 20070820  
 IN 2008-MU43 A 20080107

IT 120202-66-6P  
 RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (improved process for preparation of crystalline clopidogrel bisulfate Form I)

L3 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2009 ACS ON STN  
 AN 2008:816030 CAPLUS  
 DN 149:128810  
 TI Synthesis of crystalline clopidogrel bisulfate (form-I)  
 IN Lee, Byeong Seok; Park, Jong Sik; Shin, Sang Hun; Lee, Gi Han  
 PA Kyungdong Pharmaceutical Co., Ltd., S. Korea  
 SO Repub. Korean Kongkae Taeho Kongbo, 14pp.  
 CODEN: KRXXA7  
 DT Patent  
 LA Korean  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI KR 2008060420	A	20080702	KR 2006-134459	20061227
PRAI KR 2006-134459		20061227		

IT 120202-66-6P, Clopidogrel bisulfate  
 RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation of crystalline clopidogrel bisulfate (form-I)  
 for use as active component in antithrombotic or anticoagulant pharmaceutical compns.)

L3 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2009 ACS ON STN  
 AN 2008:51825 CAPLUS  
 DN 148:198510  
 TI Method for preparing (+)-(S)-clopidogrel bisulfate crystal form-I with high melting point  
 IN Li, Changlong; Lou, Kexia; Qin, Jing; Zhang, Da  
 PA Zhejiang Jiuzhou Pharmaceutical Co., Ltd., Peop. Rep. China  
 SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 9pp.  
 CODEN: CNXXEV  
 DT Patent  
 LA Chinese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 101100471	A	20080109	CN 2007-10069957	20070709
PRAI	CN 2007-10069957		20070709		
IT	120202-66-6P				

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(method for preparing (+)-(S)-clopidogrel bisulfate crystal form  
-I with high m.p.)

L3 ANSWER 5 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

AN 2007:1028690 CAPLUS

DN 147:350539

TI A process for the preparation of polymorph form I of (S)-(+)-clopidogrel hydrogen sulfate)

IN Garadnay, Sandor; Greiner, Istvan; Neu, Jozsef

PA Richter Gedeon Vegyeszeti Gyar Rt., Hung.

SO PCT Int. Appl., 36pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2007102037	A2	20070913	WO 2007-HU21	20070308
	WO 2007102037	A3	20081113		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA

HU 2006000194 A2 20070928 HU 2006-194 20060309

HU 2006000194 A3 20071228

AU 2007222234 A1 20070913 AU 2007-222234 20070308

CA 2640242 A1 20070913 CA 2007-2640242 20070308

EP 2010545 A2 20090107 EP 2007-733839 20070308

R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, RS

IN 2008KN03932 A 20090227 IN 2008-KN3932 20080926

NO 2008004217 A 20081208 NO 2008-4217 20081008

KR 2008110795 A 20081219 KR 2008-724578 20081008

US 20090093635 A1 20090409 US 2008-282037 20081126

PRAI HU 2006-194 A 20060309

WO 2007-HU21 W 20070308

IT 120202-66-6

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(process for preparation of polymorph form I of  
(S)-(+)-clopidogrel hydrogen sulfate))

L3 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

AN 2007:174397 CAPLUS

DN 146:213027

TI Novel process for preparation of clopidogrel bisulfate polymorphic Form I

IN Kamath, Ajit; Mali, Subhash; Ranbhan, Kamlesh; Patil, Jotiba; Zunjarrao, Yuvraj  
 PA Arch Pharmalabs Limited, India  
 SO PCT Int. Appl., 13pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2007/017886	A1	20070215	WO 2005-IN287	20050811
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

PRAI WO 2005-IN287 20050811  
 OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)  
 RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT 120202-66-6, Clopidogrel bisulfate  
 RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)  
 (organic solvents in preparation of clopidogrel bisulfate polymorphic Form I)

L3 ANSWER 7 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN  
 AN 2007:101202 CAPLUS  
 DN 148:285078

TI Synthesis of crystalline forms I of clopidogrel hydrogen sulfate and mutual conversion of the crystalline forms

AU Pan, Xianhua; Mao, Haifang; Lang, Xihong  
 CS School of Biotechnology and Food Processing Engineering, Shanghai Institute of Technology, Shanghai, 200235, Peop. Rep. China  
 SO Jingxi Huagong (2006), 23(12), 1221-1226  
 CODEN: JIHUFJ; ISSN: 1003-5214

PB Jingxi Huagong Bianjibu  
 DT Journal  
 LA Chinese  
 OS CASREACT 148:285078

IT 113665-84-2P, Clopidogrel 120202-66-6DP, Clopidogrel hydrogen sulfate, crystalline form I 120202-66-6DP, Clopidogrel hydrogen sulfate, crystalline form II 141109-19-5P, (+)-(S)-Methyl  $\alpha$ -[2-(2-(2-thienyl)ethyl)amino]- $\alpha$ -(2-chlorophenyl)acetate hydrochloride  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of crystalline forms I and II of clopidogrel hydrogen sulfate

and mutual conversion of crystalline forms)

L3 ANSWER 8 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN  
 AN 2006:952915 CAPLUS  
 DN 145:321964

TI Process for making crystalline Form I of clopidogrel hydrogen sulphate  
 IN Sajja, Eswaraiiah; Anumula, Raghupathi Reddy; Uppala, Bhaskara Rao Venkata  
 PA India  
 SO U.S. Pat. Appl. Publ., 8pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20060205766	A1	20060914	US 2005-79881	20050311
PRAI	US 2005-79881		20050311		
IT	120202-66-6P				

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses) (preparation of crystalline Form I of clopidogrel hydrogen sulfate)

L3 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN  
 AN 2006:837726 CAPLUS  
 DN 145:249191

TI Process for preparing clopidogrel hydrogensulfate of polymorphic crystal form I

IN Ruzic, Milos; Kotar-Jordan, B.; Smrkolj, Matej; Gerksic, Samo; Vrancic, Damir; Benedik, Milena; Gricar, Mira  
 PA Krka, Tovarna Zdravil, d.d., Novo Mesto, Slovenia  
 SO Eur. Pat. Appl., 7pp.  
 CODEN: EPXXDW

DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1693375	A1	20060823	EP 2005-3654	20050221
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, BA, HR, IS, YU				
WO	2006087226	A1	20060824	WO 2006-EP1513	20060220
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
PRAI	EP 2005-3654	A	20050221		

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)  
 RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT 120202-66-6P, Clopidogrel bisulfate  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process) (process for preparing clopidogrel hydrogensulfate of polymorphic crystal form I)

L3 ANSWER 10 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN  
 AN 2006:319369 CAPLUS  
 DN 144:357658

TI Rapid resolution process of clopidogrel base and a process for preparation  
 of clopidogrel bisulfate polymorph-form I

IN Deshpande, Manoj Madhukarrao; Tarur, V. R.; Sathe, Dhananjay Govind;  
 Mondkar, Harish Kashniath; Sawant, Kamlesh Digambar; Naik, Tushar Anil

PA USV Ltd., India

SO U.S. Pat. Appl. Publ., 10 pp., Cont.-in-part of U.S. Ser. No. 957,891.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20060074242	A1	20060406	US 2005-149646	20050610
	US 7446200	B2	20081104		
	US 20060047121	A1	20060302	US 2004-957891	20041004
	AU 2005327776	A1	20060824	AU 2005-327776	20050215
	CA 2567806	A1	20060824	CA 2005-2567806	20050215
	WO 2006087729	A1	20060824	WO 2005-IN48	20050215
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	EP 1848720	A1	20071031	EP 2005-747156	20050215
	R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, LV, MK, YU				
	IN 2006MN01396	A	20070518	IN 2006-MN1396	20061120
	KR 2007106674	A	20071105	KR 2007-700997	20070115
PRAI	US 2004-957891	A2	20041004		
	WO 2005-IN48	A	20050215		
	IN 2004-MU945	A	20040901		

OSC.G 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT 120202-66-6P, Clopidogrel bisulfate  
 RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use);  
 BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (rapid resolution process of clopidogrel base and process for preparation of  
 clopidogrel bisulfate polymorph-form I)

L3 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN  
 AN 2005:1154559 CAPLUS  
 DN 143:427350

TI Preparation of clopidogrel hydrogen sulfate polymorphic form I

IN Mao, Haifang; Qian, Hongguang; Chen, Chen

PA Krka, Tovarna Zdravil D.D. Novo Mesto, Slovenia

SO PCT Int. Appl., 29 pp.

CODEN: P1XXD2

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005100364	A1	20051027	WO 2005-EP4160	20050419
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	SI 21749	A	20051031	SI 2004-122	20040421
	EP 1740593	A1	20070110	EP 2005-734224	20050419
	R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, LV, MK, YU				
	NO 2006005321	A	20070109	NO 2006-5321	20061120
PRAI	CN 2004-20042004	A	20040419		
	SI 2004-122	A	20040421		
	CN 2004-10009028	A	20040419		
	WO 2005-EP4160	W	20050419		
OSC.G	1	THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)			
RE.CNT	7	THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD			
		ALL CITATIONS AVAILABLE IN THE RE FORMAT			
IT	120202-66-6P, Clopidogrel hydrogen sulfate				
	RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)				
	(preparation of clopidogrel hydrogen sulfate polymorphic form I)				
L3	ANSWER 12 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN				
AN	2005:120929 CAPLUS				
DN	142:204623				
TI	A novel process for the manufacture of (+)-(s)-clopidogrel bisulfate form-I				
IN	Jaweed Mukarram, Siddiqui Mohammed; Merwade, Aravind Yekanathsa; Khan, Anjum Reyaz				
PA	Wockhardt Limited, India				
SO	PCT Int. Appl., 9 pp.				
	CODEN: PIXXD2				
DT	Patent				
LA	English				

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005012300	A1	20050210	WO 2003-IB3104	20030804
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

CA 2534893 A1 20050210 CA 2003-2534893 20030804  
 AU 2003253120 A1 20050215 AU 2003-253120 20030804  
 EP 1651646 A1 20060503 EP 2003-817742 20030804  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK  
 BR 2003018449 A 20060801 BR 2003-18449 20030804  
 JP 2007516934 T 20070628 JP 2005-507351 20030804  
 IN 2006MN00088 A 20060929 IN 2006-MN88 20060124  
 US 20060183907 A1 20060817 US 2006-564364 20060223  
 US 7291735 B2 20071106  
 US 20080051581 A1 20080228 US 2007-896853 20070906  
 US 7482453 B2 20090127  
 PRAI WO 2003-IB3104 W 20030804  
 US 2006-564364 A3 20060223

OSC.G 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT 120202-66-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)

(novel process for manufacture of clopidogrel bisulfate form-  
 I)

L3 ANSWER 13 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

AN 2004:470987 CAPLUS

DN 141:42905

TI Crystallization process for the preparation of the crystalline polymorphic  
 form I of clopidogrel bisulfate

IN Piechaczek, Janina; Serafin, Jadwiga; Maruszak, Wioleta; Balicki, Roman;  
 Szelejewski, Wieslaw; Cybulski, Marcin; Maciejewski, Grzegorz;  
 Wysoczynska, Maria; Glice, Magdalena; Korczak, Katarzyna

PA Anpharm Przedsiębiorstwo Farmaceutyczne S.A., Pol.; et al.

SO PCT Int. Appl., 23 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004048385	A2	20040610	WO 2003-PL130	20031126
	WO 2004048385	A3	20040805		
	W:	AL, AM, AT, AU, AZ, BA, BG, BR, BY, CA, CH, CN, CO, CZ, DE, DK, DM, EC, EE, ES, FI, GB, GD, GE, HR, HU, IL, IS, JP, KG, KR, KZ, LT, LU, LV, MA, MD, MK, MN, MW, MX, NI, NO, NZ, PT, RO, RU, SE, SK, SY, TJ, TM, TR, UA, US, UZ, YU, ZA			
	RW:	AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR			
	AU 2003285841	A1	20040618	AU 2003-285841	20031126
PRAI	PL 2002-254427	A	20021128		
	WO 2003-PL130	W	20031126		

OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT 120202-66-6P, Clopidogrel bisulfate

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(crystallization process for the preparation of the crystalline polymorphic  
 form

I of clopidogrel bisulfate)

L3 ANSWER 14 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN



AN 2004:203837 CAPLUS  
 DN 140:241063  
 TI Method for the manufacture of crystalline form I of clopidogrel hydrogen sulfate  
 IN Veverka, Miroslav; Vodny, Stefan; Veverkova, Eva; Hajicek, Josef; Stepankova, Hana  
 PA Leciva, A.S., Czech Rep.  
 SO PCT Int. Appl., 18 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004020443	A1	20040311	WO 2003-CZ49	20030826
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CZ 297472	B6	20061213	CZ 2002-2906	20020827
	CA 2495823	A1	20040311	CA 2003-2495823	20030826
	AU 2003269673	A1	20040319	AU 2003-269673	20030826
	EP 1554284	A1	20050720	EP 2003-750270	20030826
	EP 1554284	B1	20081022		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	JP 2006502238	T	20060119	JP 2004-569700	20030826
	AT 411998	T	20081115	AT 2003-750270	20030826
	US 20060041136	A1	20060223	US 2005-525341	20050706
PRAI	CZ 2002-2906	A	20020827		
	WO 2003-CZ49	W	20030826		

OSC.G 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT 120202-66-6P, Clopidogrel hydrogen sulfate  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
 (method for the manufacture of crystalline form I of clopidogrel hydrogen sulfate)

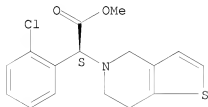
RN 120202-66-6 REGISTRY  
 ED Entered STN: 21 Apr 1989  
 CN Thieno[3,2-c]pyridine-5(4H)-acetic acid,  $\alpha$ -(2-chlorophenyl)-6,7-dihydro-, methyl ester, ( $\alpha$ S)-, sulfate (1:1) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Thieno[3,2-c]pyridine-5(4H)-acetic acid,  $\alpha$ -(2-chlorophenyl)-6,7-dihydro-, methyl ester, (S)-, sulfate (1:1)  
 OTHER NAMES:  
 CN (S)-(+)-Clopidogrel hydrogensulfate  
 CN (S)-(+)-Methyl (2-chlorophenyl) (6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)acetate bisulfate  
 CN (S)-(+)-Methyl 2-(2-chlorophenyl)-2-(6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)acetate hydrogen sulfate  
 CN Clopidogrel bisulfate  
 CN Clopidogrel hemisulfate  
 CN Clopidogrel hydrogen sulfate  
 CN Iscover  
 CN Methyl (S)-(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-5-yl) (2-chlorophenyl)ethanoate hydrogen sulfate  
 CN Plavix  
 CN SR 25990C  
 FS STEREOSEARCH  
 MF C16 H16 Cl N O2 S . H2 O4 S  
 CI COM  
 SR CA  
 LC STN Files: ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, CBNB, CHEMCATS, CIN, CSCHEM, EMBASE, HSDB\*, IMSCOSEARCH, IMSDRUGNEWS, IMSPATENTS, IMSPRODUCT, IMSRESEARCH, IPA, MEDLINE, PATDPASPC, PROMT, PROUSDDR, PS, SCISEARCH, SYNTHLINE, TOXCENTER, USAN, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)

CM 1

CRN 113665-84-2

CMF C16 H16 Cl N O2 S

Absolute stereochemistry. Rotation (+).



CM 2

CRN 7664-93-9

CMF H2 O4 S



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

227 REFERENCES IN FILE CA (1907 TO DATE)  
 3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 232 REFERENCES IN FILE CAPLUS (1907 TO DATE)

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COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

7.61

7.82

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FILE LAST UPDATED: 30 Mar 2008 (20080330/ED)

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<http://www.cas.org/infopolicy.html>

=> s l1 and (form I(l)form II)

232 L1

1704688 FORM

4462888 I

7200 FORM I

(FORM(W)I)

1704688 FORM

2211482 II

4326 FORM II

(FORM(W)II)

1786 FORM I(L)FORM II

L2

7 L1 AND (FORM I(L)FORM II)

=> d bib abs 1-7

L2 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2007:174397 CAPLUS

DN 146:213027  
 TI Novel process for preparation of clopidogrel bisulfate polymorphic Form I  
 IN Kamath, Ajit; Mali, Subhash; Ranbhan, Kamlesh; Patil, Jotiba; Zunjarrao, Yuvraj  
 PA Arch Pharmalabs Limited, India  
 SO PCT Int. Appl., 13pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2007017886	A1	20070215	WO 2005-IN287	20050811
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			

PRAI WO 2005-IN287 20050811

AB Disclosed herein is an efficient and cost-effective process for preparation of stable (S)-(+)-clopidogrel polymorphic Form I without affecting the chiral purity by dissolving/suspending the (S)-(+)-clopidogrel bisulfate Form II in first organic solvent and precipitating using second organic solvent. The process is carried out at room temperature resulting in good yields and high purity. For example, 100 g of (S)-(+)-clopidogrel bisulfate Form II was dissolved in 400 mL of methanol at room temperature, methanol was distilled, the residue obtained was seeded with 2.2 g of (S)-(+)-clopidogrel bisulfate Form I and allowed to stir for 1 h. N-Bu acetate (800 mL) was added at room temperature to precipitate the solid. The solid was filtered, washed with Bu acetate and dried at room temperature to give 96.0 g of (S)-(+)-clopidogrel bisulfate Form I.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2007:101202 CAPLUS  
 DN 148:285078  
 TI Synthesis of crystalline forms I of clopidogrel hydrogen sulfate and mutual conversion of the crystalline forms  
 AU Pan, Xianhua; Mao, Haifang; Lang, Xihong  
 CS School of Biotechnology and Food Processing Engineering, Shanghai Institute of Technology, Shanghai, 200235, Peop. Rep. China  
 SO Jingxi Huagong (2006), 23(12), 1221-1226  
 CODEN: JIHUFJ; ISSN: 1003-5214  
 PB Jingxi Huagong Bianjibu  
 DT Journal  
 LA Chinese  
 AB A synthetic method for the production of crystalline form I of clopidogrel hydrogen sulfate (I) was improved. With 3-pentanone as solvent, a reaction at -10 to -16° for 10-16 h, gave I in 80%

yield. A method for the mutual conversion of the crystalline form I and crystalline form II of clopidogrel (II) was also developed. I and II were characterized by m.p., FTIR spectrometry and x-ray powder diffraction.

L2 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2006:193972 CAPLUS  
 DN 144:260838  
 TI Novel process for preparation of clopidogrel bisulfate polymorph  
 IN Sawant, Kamlesh Digambar; Tarur, Venkatasubramanian R.; Sathe, Dhananjay Govind  
 PA India  
 SO U.S. Pat. Appl. Publ., 7 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20060047121	A1	20060302	US 2004-957891	20041004
	IN 2004MU00945	A	20070427	IN 2004-MU945	20040901
	US 20060074242	A1	20060406	US 2005-149646	20050610
PRAI	IN 2004-MU945	A	20040901		
	US 2004-957891	A2	20041004		
	WO 2005-IN48	A	20050215		

AB A process for making clopidogrel bisulfate Form I which comprises dissolving clopidogrel bisulfate Form II in a solubilizing solvent at room temperature to form a solution; adding an anti-solvent to the the solution till turbid; stirring the the turbid solution; collecting the precipitated solid and drying the final solid product, form I.

L2 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2005:612253 CAPLUS  
 DN 143:139168  
 TI Processes for preparation of different forms of (S)-(+)-clopidogrel bisulfate  
 IN Lohray, Braj Bhushan; Lohray, Vidya Bhushan; Pandey, Bipin; Dave, Mayank Ghanshyambhai; Dholakia, Parind Narendra  
 PA Cadila Healthcare Limited, India  
 SO PCT Int. Appl., 25 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005063708	A2	20050714	WO 2004-IN341	20041102
	WO 2005063708	A3	20051006		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, BG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	IN 2003MU01154	A	20060106	IN 2003-MU1154	20031103

IN 2003MU01217 A 20060106 IN 2003-MU1217 20031125  
CA 2544443 A1 20050714 CA 2004-2544443 20041102  
EP 1680430 A2 20060719 EP 2004-820865 20041102  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK,  
HR, IS, YU  
NO 2006002062 A 20060724 NO 2006-2062 20060508  
KR 2007006679 A 20070111 KR 2006-710714 20060601  
US 20070082924 A1 20070412 US 2006-577940 20060712  
PRAI IN 2003-MU1154 A 20031103  
IN 2003-MU1217 A 20031125  
WO 2004-IN341 W 20041102  
AB The invention provides improved processes for the preparation of hydrated form  
of (S)-(+)-clopidogrel bisulfate as well as improved processes for the  
preparation of Form-I and Form-II of  
(S)-(+)-clopidogrel bisulfate. (S)-(+)-clopidogrel was dissolved in MeOH  
and treated with sulfuric acid to give a hydrated amorphous form.  
L2 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2008 ACS on STN  
AN 2004:894728 CAPLUS  
DN 142:204399  
TI Qualitative and quantitative analysis of clopidogrel bisulphate polymorphs  
AU Koradia, Vishal; Chawla, Garima; Bansal, Arvind K.  
CS Department of Pharmaceutical Technology (Formulations), National Institute  
of Pharmaceutical Education and Research (NIPER), Punjab, 160 062, India  
SO Acta Pharmaceutica (Zagreb, Croatia) (2004), 54(3), 193-204  
CODEN: ACPHEE; ISSN: 1330-0075  
PB Croatian Pharmaceutical Society  
DT Journal  
LA English  
AB This study deals with characterization and quantification of form  
I and form II of clopidogrel bisulfate (CLP),  
a selective and irreversible inhibitor of ADP-induced platelet  
aggregation. Thermal (DSC, TGA, HSM), crystallog. (XRD) and spectroscopic  
(FITR) methods were used for characterization. After characterization of  
active pharmaceutical ingredient (API), these techniques were further used  
for identification of the polymorphic form present in three marketed  
formulations (tablets). FTIR method was successfully developed and  
validated for the quantification of form I in  
polymorph mixts.  
RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT  
L2 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2008 ACS on STN  
AN 2003:950061 CAPLUS  
DN 140:8764  
TI Polymorphs of clopidogrel hydrogen sulfate  
IN Lifshitz-Liron, Revital; Kovalevski-Ishai, Eti; Wizel, Shlomit;  
Avhar-Maydan, Sharon; Lidor-Hadas, Rami  
PA Teva Pharmaceutical Industries, Ltd., Israel  
SO U.S. Pat. Appl. Publ., 31 pp., Cont.-in-part of U.S. Ser. No. 74,409.  
CODEN: USXXCO  
DT Patent  
LA English  
FAN.CNT 3  
PATENT NO. KIND DATE APPLICATION NO. DATE  
-----  
PI US 20030225129 A1 20031204 US 2003-339008 20030108  
US 7074928 B2 20060711  
US 20030114479 A1 20030619 US 2002-74409 20020212  
US 6767913 B2 20040727

WO 2003051362 A2 20030626 WO 2002-US40679 20021218  
 WO 2003051362 A3 20030807

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2002-348182P P 20020111  
 US 2002-74409 A2 20020212  
 US 2002-359157P P 20020221  
 WO 2002-US40679 A 20021218  
 US 2001-342440P P 20011218  
 US 2001-342351P P 20011221

AB Provided are new crystalline Forms III, IV, V and VI of clopidogrel hydrogen sulfate and the amorphous form of clopidogrel hydrogen sulfate, as well as their pharmaceutical compns., and method of treatments with such compns. Also provided are novel processes for the preparation of clopidogrel hydrogen sulfate Form I, Form II, Form III, Form IV, Form V, Form VI and amorphous form. Clopidogrel base (4.27 g) was dissolved in Me Et ketone (MEK) (33.7 mL). Eighty percent aqueous H2SO4 (1.03 mL) was added to the solution at 20°. The reaction mixture was heated to reflux temperature for 2 h and then the solution was cooled to room temperature and stirred at this temperature for addnl. 67 h during which a precipitate was formed. The white solid was collected by filtration, washed with MEK and dried at 50° in a vacuum oven for 24 h to obtain 4.59 g (82%) of clopidogrel hydrogen sulfate crystal Form II.

L2 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2008 ACS on STN  
 AN 2003:491043 CAPLUS  
 DN 139:74015  
 TI Polymorphs of clopidogrel hydrogen sulfate  
 IN Lifshitz-Liron, Revital; Kovalevski-Ishai, Eti; Wizel, Shlomit; Avhar-Maydan, Sharon; Lidor-Hadas, Rami  
 PA Teva Pharmaceutical Industries Ltd., Israel; Teva Pharmaceuticals USA, Inc.  
 SO PCT Int. Appl., 70 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003051362	A2	20030626	WO 2002-US40679	20021218
WO 2003051362	A3	20030807		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 20030114479	A1	20030619	US 2002-74409	20020212
US 6767913	B2	20040727		
CA 2470479	A1	20030626	CA 2002-2470479	20021218
AU 2002366383	A1	20030630	AU 2002-366383	20021218
AU 2002366383	B2	20070614		
EP 1467735	A2	20041020	EP 2002-805215	20021218
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
HU 2004002485	A2	20050428	HU 2004-2485	20021218
JP 2005514387	T	20050519	JP 2003-552295	20021218
US 20030225129	A1	20031204	US 2003-339008	20030108
US 7074928	B2	20060711		
ZA 2004004733	A	20050615	ZA 2004-4733	20040615
IN 2004DN01705	A	20070323	IN 2004-DN1705	20040616
MX 2004PA06088	A	20040927	MX 2004-PA6088	20040617
NO 2004003038	A	20040909	NO 2004-3038	20040716
IN 2007DN08318	A	20080111	IN 2007-DN8318	20071029
PRAI US 2001-342440P	P	20011218		
US 2001-342351P	P	20011221		
US 2002-348182P	P	20020111		
US 2002-74409	A	20020212		
US 2002-359157P	P	20020221		
WO 2002-US40679	W	20021218		
IN 2004-DN1705	A3	20040616		
AB	<p>Provided are new crystalline Forms III, IV, V and VI of clopidogrel hydrogen sulfate and the amorphous form of clopidogrel hydrogen sulfate, as well as their pharmaceutical compns. for inhibiting platelet aggregation. Also provided are novel processes for preparation of clopidogrel hydrogen sulfate Form I, Form II, Form III, Form IV, Form V, Form VI and amorphous form. For example, 5.31 g of clopidogrel base was dissolved in 41.9 mL of Et acetate, and 1.29 mL of 80% aqueous H2SO4 was added. The reaction mixture was heated and a massive precipitate was formed;</p> <p>the solution was cooled to room temperature, and white solid was collected by filtration, washed with Et acetate and dried to obtain 4.60 g (66%) clopidogrel hydrogen sulfate Form II.</p>			